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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/895,749	06/29/2001	Julien Piot	19414-06164	3359

758 7590 05/13/2004

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EXAMINER

NGUYEN, JENNIFER T

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 05/13/2004

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/895,749

Applicant(s)

PIOT ET AL.

Examiner

Jennifer T Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27 and 45-90 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27, 45-49, 54-65, 69-74, 77, 79-88 and 90 is/are rejected.
- 7) ☒ Claim(s) 50-53, 66-68, 75, 76, 78 and 89 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This Office action is responsive to amendment filed on 02/09/2004.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 27, 45-49, 54-65, 69-74, 77, 79-88, and 90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dandliker et al. (U.S. Patent No. 5,907,152) in view of Jackson (U.S. Patent No. 4,794,384).

Regarding claims 27 and 69, referring to Figs. 1, 2, and 5C, Dandliker teaches an optical detection system housing a coherent light source (10) for illuminating a surface (15), and an optical sensing assembly comprising at least one photosensitive array (D1, D2) and at least one optical element (20), a method for detecting movement comprising: generating an illumination spot on the surface (15) by lighting the surface (15) with a coherent light beam from the coherent light source (10), the illumination spot providing optically back-scattered light off the surface (15); arranging each optical element (20) to pass an image of the illumination spot onto each photosensor array (D1, D2) associated with an optical element, the photosensor array (D1, D2) having a plurality of pixels; and generating at least one image data signal from each photosensor array (D1, D2) in response to the image (30) on the plurality of pixels that photosensor array, each image data signal comprising at least one image data point (from col. 3, line 46 to col. 4, line 41 and col. 6, lines 46-65).

Dandliker differs from claims 27 and 69 in that he does not specifically teach storing a first image data signal storing a second image data signal; and measuring similarity of images through the first image data signal and the second image data signal to obtain a displacement value the displacement value indicative of detected movement. However, referring to Figs. 1 and 3B, Jackson teaches storing a first image data signal storing a second image data signal; and measuring similarity of images through the first image data signal and the second image data signal to obtain a displacement value the displacement value indicative of detected movement (col. 2, lines 34-52, from col. 6, line 39 to col. 9, line 40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the storing a first image data signal storing a second image data signal; and measuring similarity of images through the first image data signal and the second image data signal to obtain a displacement value the displacement value indicative of detected movement as taught by Jackson in the system of Dandliker in order to provide optical mouse which detect movements with greater precision.

Regarding claims 45-49 and 70-73, 77, the combination of Dandliker and Jackson teaches the first image data signal is stored in a first portion of a memory unit and the second image data signal is stored in a second portion of the memory unit (col. 2, lines 34-52, from col. 6, line 39 to col. 9, line 40 of Jackson).

Regarding claims 54, 74, and 79, the combination of Dandliker and Jackson teaches measuring the similarity is performed through an application of a cross correlation function (from col. 8, line 28 to col. 12, line 64 of Jackson).

Regarding claim 55, the combination of Dandliker and Jackson teaches the displacement value comprises identifying a shift to apply to the first image data signal that results in a

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substantial similarity between the first image shifted by the displacement value and the second image (col. 2, lines 34-52, from col. 6, line 39 to col. 9, line 40).

Regarding claims 56 and 80, the combination of Dandliker and Jackson teaches the first image data signal is replaced by the second image data when a displacement value comprises a predetermined value (from col. 8, line 58 to col. 9, line 60).

Regarding claims 57, 58, 81, and 82, Dandliker further teaches at least one optical element comprises a lens and an aperture (col. 3, lines 45-67).

Regarding claims 59-63 and 83-85, Dandliker further teaches the coherent light beam from the coherent light source comprises a collimated beam which produces the illumination spot on the surface and the light source comprises a laser diode, wherein the back-scattered light from the surface, passes through the at least one optical element to generate an image of the illumination spot on the pixels of the at least one photosensor array (from col. 3, line 46 to col. 4, line 41 and col. 6, lines 46-65).

Regarding claims 64 and 86, Dandliker further teaches the back-scattered light from the surface, passes through the at least one optical element to generate an image of the illumination spot that is less than or equal to a size of the photosensor array (from col. 3, line 46 to col. 4, line 41 and col. 6, lines 46-65).

Regarding claims 65 and 87, Dandliker further teaches the speckle image associated with at least one of the first speckle image data signal and the second speckle image data signal comprises speckles of a dimension greater than or equal to a pixel dimension (from col. 3, line 46 to col. 4, line 41 and col. 6, lines 46-65).

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Regarding claims 88 and 90, Dandliker further teaches the photosensor array comprises a plurality of photodiode pixels (from col. 3, line 46 to col. 4, line 41 and col. 6, lines 46-65).

4. Claims 50-53, 66-68, 75, 76, 78, and 89 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims..

5. Applicant's arguments with respect to claims 27 and 45-90 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jennifer T. Nguyen** whose telephone number is **703-305-3225**.

The examiner can normally be reached on Mon-Fri from 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reach at **703-305-4709**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, DC. 20231

Or faxed to: 703-872-9306 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, sixth-floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding


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should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703-306-0377.

JNguyen
05/06/2004


REGINA LIANG
PRIMARY EXAMINER